CLAIMS

What is claimed is:

1. A method of communicating over a network between a calling client behind a first firewall and a called client behind a second firewall, the method comprising the steps of:

   providing first and second discovery servers coupled to said network; each of said discovery servers containing address and port information associated with said calling and called clients;

   at said calling client:

   > retrieving from said first and second discovery servers said calling client's address and port;

   > generating and sending to said called client a first data message comprising said calling client's address and port;

   at said called client:

   > receiving said calling client's first data message and determining said calling client's address and port therefrom;

   > retrieving from said first and second discovery servers said called client's address and port;

   > generating and sending to said calling client a second data message comprising said called client's address and port;

generating and sending a first discovery data packet to said calling client's address and port;

at said calling client:

receiving said called client's second data message and determining said called client's address and port therefrom;

generating and sending a second discovery data packet to said called client's address and port;

wherein if, after a predetermined time period said calling or called client does not receive said first or second discovery data packet then: sending a plurality of third discovery data packets to a predefined range of ports until an active address associated with said calling or called client is discovered, and receiving said third discovery data packet at said discovered address; otherwise, receiving said first and second discovery data packet at said calling and called address, respectively.

2. The method as in claim 1 wherein the method further comprises:

providing a server coupled to said network; said server being associated with said calling and called clients;

at said calling client:

sending to said called client said first data message comprising said calling client's address and port via said server;

at said called client:

sending to said called client said second data message comprising said called client's address and port via said server.

3. The method as in claim 1 wherein the first and second discovery servers include private and public port and address information associated with said calling and called clients.

4. The method as in claim 1 wherein the first discovery server includes first port and address information associated with said calling and called clients and said second discovery server includes second port and address information associated with said calling and called clients.

5. The method as in claim 4 wherein the first message generation steps further comprise: determining a first differential value between the calling client's first port and the second port; and generating said first data packet comprising said calling client's address and port and said differential value.

6. The method as in claim 4 wherein the second message generation steps further comprise: determining a second differential value between the called client's first port and the second port; and generating said second data packet comprising said called client's address and port and said second differential value.

7. The method as in claim 6 wherein said second data packet further includes modifications to the calling client's first data packet.

8. The method as in claim 1 wherein the predefined range of ports is extrapolated from the first or second differential values.

9. The method as in claim 1 wherein said data packets are Universal Data Packets.

10. The method as in claim 1 wherein said first and second firewall include Symmetric or Cone Firewall/ Network Address Translation.

11. The method as in claim 1 wherein said first and second firewall include Symmetric or Cone Network Address Translation / Port Address Translation.

12. The method as in claim 1 wherein said first and second firewall said first and second firewall include UPnP, UPnP, Network Address Translation / Port Address Translation, Multi- Network Address Translation or any combination of the foregoing.

13. A system for communicating over a network comprising:

a calling client associated with a first firewall; said calling client coupled to said network;

a called client associated with a second firewall; said calling and called client coupled to said network;

first and second discovery servers coupled to said network; each of said discovery servers containing address and port information associated with said calling and called clients;

said calling client configured to:

retrieve from said first and second discovery servers said calling client's address and port;

generate and send to said called client a first data message comprising said calling client's address and port;

said called client configured to:

receive said calling client's first data message and determining said calling client's address and port therefrom;

retrieve from said first and second discovery servers said called client's address and port;

generate and send to said calling client a second data message comprising said called client's address and port;

generating and sending a first discovery data packet to said calling client's address and port;

said calling client further configured to:

receive said called client's second data message and determining said called client's address and port therefrom;

generate and send a second discovery data packet to said called client's address and port;

wherein said calling or called client is further configured to:

if, after a predetermined time period said calling or called client does not receive said first or second discovery data packet then: send a plurality of third discovery data packets to a predefined range of ports until an active address associated with said calling or called client is discovered, and receive said third discovery data packet at said discovered address; otherwise, receive said first and second discovery data packet at said calling and called address, respectively.

14. The method as in claim 13 wherein the system further comprises:

a server coupled to said network; said server being associated with said calling and called clients;

said calling client configured to send to said called client said first data message comprising said calling client's address and port via said server;

said called client configured to send to said called client said second data message comprising said called client's address and port via said server.

15. The method as in claim 13 wherein the first and second discovery servers include private and public port and address information associated with said calling and called clients.

16. The method as in claim 13 wherein the first discovery server includes first port and address information associated with said calling and called clients and said second discovery server includes second port and address information associated with said calling and called clients.

17. The method as in claim 16 wherein the first message generation steps further comprise: determining a first differential value between the calling client's first port and the second port; and generating said first data packet comprising said calling client's address and port and said differential value.

18. The method as in claim 16 wherein the second message generation steps further comprise: determining a second differential value between the called client's first port and the second port; and generating said second data packet comprising said called client's address and port and said second differential value.

19. The method as in claim 18 wherein said second data packet further includes modifications to the calling client's first data packet.

20. The method as in claim 13 wherein the predefined range of ports is extrapolated from the first or second differential values.

21. The method as in claim 13 wherein said data packets are Universal Data Packets.

22. The method as in claim 13 wherein said first and second firewall include Network Address Translation/Port Address Translation.

23. The method as in claim 13 wherein said first and second firewall include Symmetric or Cone Firewall/ Network Address Translation or any combination of the foregoing.

24. The method as in claim 13 wherein said first and second firewall include UPnP, Network Address Translation / Port Address Translation, Multi- Network Address Translation or any combination of the foregoing.